IN THE SPECIFICATION:

IN THE TITLE:

Please delete the title and insert the following new title of the invention in lieu thereof:

~~AUTOMATIC CONTRAST FOCUSING WITH THREE OPTICAL PATHS~~

Method and apparatus for determining the distance between a point of an object to a specified reference point

Page 1, line 3, please insert the following section heading:

BACKGROUND OF THE INVENTION

Please amend the paragraph beginning at line 11, page 6, as follows:

SUMMARY OF THE INVENTION

According to the invention, the knowledge that the contrast values measured at different distances between the measuring point and the working plane of a sensor are located roughly on a parabola is utilized, wherein the contrast values at the vertex correspond to the optical distance between the working plane of the sensor and the point at its sharp depiction. When using several sensors, which have different distances to a point that is to be represented, and determining the contrast value curves and standardizing them based on the geometric relation of the sensors or optical paths to each other, then through determination of the contrast values measured in each sensor at a specified distance, the contrast value curve of

the sensor, on whose working plane the point is to be depicted sharply, can be calculated due to the previously known relation of the contrast value curves or parabolas ~~parabolae~~ to each other. The point to be measured is then in the focusing plane of the optical system allocated to the sensor. After calculating the appropriate contrast value curve, only the vertex still has to be determined to be able to obtain the distance that are to be maintained and if need be set between the sensor and the measuring point.

Please amend the paragraph beginning at line 15, page 10, as follows:

BRIEF DESCRIPTION OF THE DRAWINS:

Depicted is:

Fig. 1 a basic representation of a sensor arrangement for determining the distance of a point and

Fig. 2 principal courses of contrast value curves determined with the sensors from Fig. 1;

Fig. 3 is basic representation of the coordinate measuring machine in accordance with the invention.

DETAILED DESCRIPTION OF THE INVENTION

Please amend the paragraph beginning at line 16, page 11, as follows:

In order to be able to determine in the embodiment the distance between the sensor 14, i.e. its working plane, to a point that is to be measured, in the embodiment point 10, from the contrast values, which are determined via the

sensors 14, 20, 22 at a specified distance, without requiring that the point 10 be sharply depicted in one of the working planes of the sensors 14, 20, 22, initially the respective contrast value course that is to be measured in the sensors 14, 20, 22 is determined so that measuring curves are obtained, which are shown in Fig. 2, i.e. the parabola 16 of sensor 14 as well as the parabolas ~~parabolae~~ 30, 32, which run offset due to the sensors 20, 22 being arranged at different optical distances compared to the sensor 14, wherein the parabola 30 is allocated to sensor 22 and the parabola 32 to sensor 20. This offsetting of the parabolas ~~parabolae~~ 16, 30, 32 with regard to their distance results from the circumstance that the sensors 14, 20, 22 have different sharpness planes, which are labeled in Fig. 1 with the reference numbers 34, 36 and 38.